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I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL POSTAGE PREPAID IN AN ENVELOPE ADDRESSED TO:
Assistant Commissioner for Patents,
WASHINGTON, D.C. 20231,
ON November 11, 1999

Rupert B Hurley

Rupert B. Hurley Jr.
Registration No. 29,313
November 11, 1999
DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Childress et al	Attorney Docket No.:	41933-01
Serial No.:	08/354,177	Group Art Unit:	1761
Filing Date:	12/12/94	Examiner:	Tran Lien
Title:	HEAT SHRINKABLE FILMS CONTAINING SINGLE SITE CATALYZED COPOLYMERS		

DECLARATION UNDER 37 CFR 1.131

Assistant Commissioner for Patents
Washington, D.C. 20231

State of South Carolina
County of Spartanburg

I, Blaine Childress, declare as follows:

1. That I received my Bachelor of Science Degree in Textile Chemistry at Auburn University in 1974; and received my Master of Science Degree in Textile Chemistry in 1978;

2. That from 1978 through April 1, 1998 I was employed by the Cryovac Division of W.R. Grace & Co.-Conn. in Duncan, South Carolina as Research Associate; that from April 1, 1998 to the present I have been employed by Cryovac, Inc. My career at Cryovac

has included laboratory management including supervision of microscopy, thermal analysis, and spectroscopy. Since 1991 my focus has been in product development in the polymer science group of Research Development, and Engineering.

3. Prior to April 26, 1993 I made a heat-shrinkable film for use in a heat-shrinkable patch bag structure, and prior to April 26, 1993, I also tested this film and determined that it had an impact strength high enough to be used as a heat-shrinkable patch film in a heat-shrinkable patch bag, as evidenced by the following:

3a. Prior to April 26, 1993, I prepared and tested a Control Film (Exhibit A) as well as a First Experimental Film (Exhibits B1 and B2) and a Second Experimental Film (Exhibits C1 and C2);

3b. The Control Film was designated as "B003" (See Exhibit A), which is the Cryovac manufacturing code for the commercialized film to be used as a patch film for a patch bag; the Control film had a thickness of 4.5 mils, and had an A/B//B/A structure in which A represented a blend of 87% LLDPE, 10% EVA, and 3% additive package, and B represented 100% EVA (all resin codes have been redacted from each of Exhibits A, B1, B2, C1, and C2, with the code names being replaced in red ink with generic names substituted therefor, to aid in understanding the exhibits);

3c. The First Experimental Film had the same thickness and layer arrangement as the Control Film (see Exhibit B1), and was designated "FDX 4315" (see Exhibit B2); while Exhibit B1 is a notebook page providing the manufacturing details associated with the developmental production run, Exhibit B2 is a page from the developmental film structures notebook which provides the layer arrangement and composition for this same film; the notebook pages of Exhibits B1 and B2 correspond with one another, as can be seen from the fact that the multilayer structure of Exhibit B1 corresponds with the multilayer

structure of Exhibit B2; the First Experimental Film differed from the Control Film in that the resin in the B layer was not EVA, but rather was SLP-4008, a metallocene-catalyzed ethylene/butene resin obtained from the Exxon Chemical Company which is a linear homogeneous ethylene/alpha-olefin copolymer;

3d. The Second Experimental film also had the same thickness and layer arrangement as the Control Film (see Exhibit C1), and was designated "FDX 4316" (see Exhibit C2); the Second Experimental Film differed from the Control Film in that the EVA in the A layer was replaced with EXACT SLP 3011D metallocene-catalyzed ethylene/hexene resin obtained from the Exxon Chemical Company, which is also a linear homogeneous ethylene/alpha-olefin copolymer, and the resin in the B layer was SLP-4008 as in the First Experimental Film;

3e. The First Experimental Film and the Second Experimental Film were each tested according to standard methods employed for testing commercial offerings for use in a patch bag, including instrumented impact strength testing; the instrumented impact strength test results are set forth in TSR 20825, a Table from which is provided herewith as Exhibit D (TSR 20825 is a report issued prior to April 26, 1993 in response to an earlier-submitted Technical Service Request);

3f. Exhibit D also provides the Impact Strength results for the Control Film (i.e., B003), the First Experimental Film (i.e., FDX 4315) and the Second Experimental Film (i.e., FDX 4316); as is clear from Exhibit D1, each of these films has comparable impact strength;

3g. Exhibit D also provides the Free Shrink results for the Control Film (i.e., B003), the First Experimental Film (i.e., FDX 4315) and the Second

Experimental Film (i.e., FDX 4316); as is clear from Exhibit D2, each of these films has comparable free shrink.

4. Each of Exhibits A, B1, B2, C1, C2, and D is a copy of a notebook page which is dated before April 26, 1993; the dates have been redacted from the Exhibit copies in order to keep my date of invention confidential;

5. Prior to April 26, 1993, based on the activities in Exhibit A versus the activities in Exhibits B1, B2, C1, and C2, as discussed in Paragraphs 3a-3g above, it was determined that the homogeneous ethylene/alpha-olefin copolymer was successful for use in a heat-shrinkable patch film exhibiting an impact strength at least as high, and in at least one instance even higher than, the otherwise surprisingly high impact strength of the heat-shrinkable patch film disclosed in U.S. Patent No. 4,770,731, to FERGUSON;

6. Although the notebook pages provided herewith as Exhibits A, B1, B2, C1, C2, and D constitute evidence of possession of the invention in the U.S. prior to April 26, 1993, they are not the only evidence of possession of the invention in the U.S. prior to April 26, 1993.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Blaine C Childress

Blaine C. Childress

EXHIBIT A (highlighting added)
codes redacted – generic description of resins added

PROBLEM NO. 137-0017

SUBJECT: B003 Modification

CRYOVAC®

Line Conditions for B003 at Iowa Park Tx. Line 1

Extruder and Die Conditions	"B"	"C"	Die
Loop 1	225/225	425/427	400/408
2	225/225	425/425	400/400
3	245/246	415/415	400/410
4	250/245	375/375	400/510
5	250/255	375/375	475/475
6	250/24	410/413	475/476
Melt Temp.	274	494 ✓	
Feed Press.	5500 psi.	6300 psi ✓	

Cold Bath Conditions

Water Flow (GPM) 35

Inventory Position

Variac 85

Duster Setting 16 Micro Air 70 Steam 28 Kit 43

Water Temp 42°F

Dust used in Micro mark 20

Racking Conditions

	S.P.	A.T.
Inventory Preheat	180°F	85°F

Inventory Preheat N/A

Decorinkler N/A

Pit Preheat N/A

C.B./Deflate

Long Racking Ratio 3.67 ✓

Trans Racking Ratio 3.87 ✓

34.29

4.50

A/B/B/A Structure

A: LLDPE 87.0% B: 100% EVA

EVA 10.0%

ADDITIVE PKG 3.0%

CONFIDENTIAL

Tension 39

SIGNED [signature]

UNDERSTOOD AND WITNESSED: [signature]

№ 239360 B

EXHIBIT B1 (highlighting added)

CRYOVAC®

PROBLEM NO. 137-0017 DATE

SUBJECT: B003 Alternate Resins

This project is a replacement resin for [redacted] the seal layer. Codes + Generic description of resins added

During transition the optics of the bubble became much coarse. Also the head pressure and amps increased significantly.

Extruder & Die Conditions

Loop		"B"	"C"	Die
	1	280/280	420/405	399/400
	2	290/290	405/425	419/400
	3	305/315	405/405	483/400
	4	313/320	375/375	505/400
	5	322/325	374/375	475/400
	6	314/325	410/400	475/400
Melt Temp.		348	485	
Head Press.		7500	6300	
RPM		14.5	76.6	

Cold Bath Conditions

Water flow	35 GPM
Water Temp	42° F
Inv. Pos.	
Variac	9
Dust Type	MicroMARK 20
Duster Set	16
Dust Main Air	70
Dust Stem Air	28
Dust Vibrator	42
Line Spd. Ref.	82.7

Racking Conditions

Line rate was decreased to accomodate the increased head pressure.

Long R.R. 3.75 Tension 40

Trans R.R. 3.67

Tape Ga. 2.9 mil Tape Width 15 1/4

Film Ga. 4.50 Film Width 56

A/B/B/ Structer

A= 87.0% LLDPE

10.0% EVA

3.0% additive pkg

B= Exxon Exact SLP4008 Lot # 90201

CONFIDENTIAL

SIGNED

DATE

UNDERSTOOD AND WITNESSED:

DATE

N° 239361 B

EXHIBIT B2
(highlighting added)
(resin generic description added)

FDX 4315

Modified B003 Structure using
EXXON SLP 4008

Two layer self laminating structure

A/B // B/A

A/B = 85/15

A = 87% LLDPE, 10% EVA, 3% additive pkg
B = 100% EXXON SLP 4008 lot 90201

Extruder B which pumped the 4008 experienced higher head pressures relative to standard EVA constituent

Otherwise the film ran very well and was an excellent replace

H. W. Darach III

EXHIBIT C1
- highlighting added
- codes redacted
- generic resin description added

PROBLEM NO. 137-0017 DATE

SUBJECT: 3003 Alternate Resins

CRYOVAC

This project is a replacement for ~~[redacted]~~ which is one of the three components of the outer layer. The replacement resin will be EXXON Exact $LP 3011D lot No. 90246. The optics are ~~still poor~~ NOT ANY better than the STANDARD film ~~[redacted]~~ now running.

	Extruder and Die Conditions "B"	"C"	Die	Racking Conditions
Loop #1	380/380	427/425	400/400	
2	330/330	425/425	420/400	
3	332/315	425/425	486/400	
4	313/330	374/375	510/400	
5	321/325	371/375	475/475	
C	312/325	411/400	477/475	Cold Bath Conditions
Melt Temp.	374	470		Taper 1
Hood Press.	7500	7000		Tension 40
				Footage 4000

Inv. Pos.	
Variac	9
Duster Set	16
Main Air	68
Stem Air	28
Vibrator	42
Line Spd Ref.	82.7

Iso Nips 147.7

rpm/Decimals

Long. Racking Ratio 3.72

Trans. Racking Ratio

Tape Ga. 29 Tape Width 15¼

Film Ga 450 Film Width 56

A/B//B/A Structure

A= 87.0% LLDPE (Lot #90246)
10.0% Exxon Exact (SLP 3011D)
3.0% additive pkg.

B= Exxon Exact SLP4008 Lot # 90201

CONFIDENTIAL

SIGNED _____ DATE _____

UNDERSTOOD AND WITNESSED: _____ DATE _____

№ 239362 B

• EXHIBIT C2
- highlighting added
- codes redacted
- generic resin ~~description~~ added

46

FDX 4316

Modified B003 Structure using EXXON SLP 4008 AND SLP 3011 D

A/B//B/A structure A/B layer ratio 85/15

A = 87% LLDPE, 10% Exxon SLP 3011 D, 3% additive pkg
B = 100% Exxon SLP 4008

Addition of SLP 3011 D in place of KAVA caused an increase in head pressures for extruder C

No problems were encountered other than higher pressure and amperage.

H. W. Dorsch III

EXHIBIT D
- highlighting added

TSR 20825
Summary of Physical Property Testing

Structure	Longitudinal Tensile psi	Elong %	Transverse Tensile psi	Elong %	Free Shrink 185°F L,T	205°F L,T	Peak Impact	Haze	Clarity
B003	10,800	193	13,000	140	10,17	20,30	100	27.8	4.5
FDX 4315	11,450	211	11,650	138	11,16	20,30	97	32.2	2.1
FDX 4316	13,000	214	13,600	184	11,18	21,32	109	31.3	1.5